

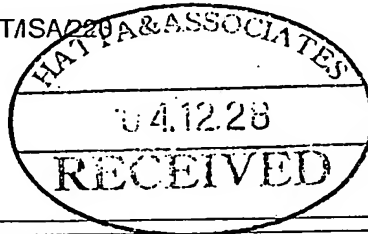
PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220



WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2004/009049

International filing date (day/month/year)
21.06.2004

Priority date (day/month/year)
23.06.2003

International Patent Classification (IPC) or both national classification and IPC
C07C209/58, C07C211/52

Applicant
NIPPON SHOKUBAI CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2004/009049

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating theret has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2004/009049

Box No. II Priority

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
4. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-4
	No: Claims	5,6
Inventive step (IS)	Yes: Claims	1-4
	No: Claims	5,6
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

2. Citations and explanations

see separate sheet

The present application concerns a process for preparing a fluoro-phenylenediamine from the corresponding fluoro-phenylene diamide by the reaction of NaOX with X being a Cl or a Br and a molar ratio of NaOX to the diamide of between 2.0 to 6.0.

D1 discloses the preparation of tetrafluoro-phenylene diamine from the corresponding isophthaloyl compound in the presence of hydrazoic acid or sodium azide in a strong acid.

D2 describes the preparation of a 2-nitro phenylenediamine from 2-nitroisophthalimide with NaOCl by the Hoffman rearrangement.

D3 discloses the Hoffman rearrangement of 2-nitroisophthalic acid diamide to make 2-nitro-1,3-phenyldiamine in the presence of NaOBr/diamide 2:1 and NaOH/diamide 4:1 (range falls within the range of claim 1). However the starting material and the product are different from the application since they lack the pluri-fluor substitution and no nitro substituent is possible in the application.

D4 discloses the preparation of the starting material by halogen exchange.

It was not obvious for the skilled person to combine the closest prior art D1 (same product and starting material) with D1 since only a nitro-substituted phenyl not substituted by halogens are used as starting material in D1, which is excluded in present process.

As regard to the subject-matter of claim 5 and 6, it is already known from the prior art cited in the search report and the application (D5,D6). The fact that the starting material is defined as "prepared by the process of claim 1" does not confer novelty and inventive step to a known process, because the starting material is per se already known and described.

Further remarks:

The searching authority was unable to retrieve the prior art cited in the description at page 3, lines 1-3 because the citation was not complete. According to the applicant this should be considered as the closest prior art since it concerns the Hoffman rearrangement of tetrafluoroisophthalamide, therefore it is necessary that the applicant provides a more precise citation.